

Strategies for a Living Earth

Examples From Canadian Aboriginal Communities

3 1761 11554995 8



Prepared by
Natasha Blanchet-Cohen

for the
Biodiversity Convention Office
Environment Canada

CA1
EP560
-1996
S74

Biodiversity
Associates
Report

2

Canada

A product of the Biodiversity Associates Program
of Environment Canada

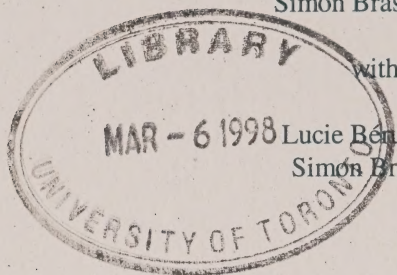
Prepared under the leadership of

Simón Brascoupé, Trent University

with the assistance of

Lucie Bérubé, desktop publishing

Simón Brascoupé, graphic artist



Aussi disponible en français sous le titre:

Stratégies pour une planète vivante
Exemples de communautés autochtones du Canada

Additional copies can be obtained free of charge from:

The Biodiversity Convention Office
Environment Canada
351 St. Joseph Blvd., 5th Floor
Place Vincent Massey
Ottawa, Ontario
K1A 0H3
Tel: (819) 953-4374; Fax: (819) 953-1765
e-mail at: bcodocs@cpits1.am.doe.ca

Cat. No. En 21-147/1996E

ISBN 0-662-24449-4 (English edition)


ISBN 0-662-81100-3 (édition français)



Printed on recycled paper using vegetable oil ink

Table of Contents

Introduction	1
Purpose of the Study	2
Background	3
Methodology for Case Studies	4
 Case studies	
Hesquiaht	5
Background	5
Management for a Living Hesquiaht Harbour	6
Inventorying and Monitoring Resources	6
Determining Sustainable Harvest	6
Integrating Scientific and Aboriginal Knowledge	7
Hesquiaht and Provincial Processess	8
Biodiversity-Friendly Employment	9
Walpole Island	10
In Context	10
Biodiversity Conservation and Community Education	11
Capacity-Building and Partners	12
Economic Development, Community and Biodiversity	12
Biodiversity Conservation and Educating Environmental Stakeholders	13
Akwesasne	15
Background	15
Biodiversity-Related Activities in Akwesasne	16
The Aquaculture Project	16
The Black Ash Project	17
Strategy	17
Partnerships and Biodiversity	18
Eel Ground	19
Background	19
The Management Plan	20
Capacity-building	21
Economic Development and Job Creation	22
 Discussion	23
 Conclusion	29
 Bibliography	30
 Thanksgiving Address	31



Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

<https://archive.org/details/31761115549958>

Acknowledgments

This report would have been impossible without the many people who volunteered their time to us, explaining and sharing their work. We very much appreciate the information and advice we received from the communities, Hesquiaht Band Council, Walpole Island Heritage Centre, Mohawk Council of Akwasasne Environmental Division and Eel Ground Community Development Centre Inc. We would like to thank in particular a number of individuals: Sennen Charleson, Steve Charleson, Stephen Ginnish, Dean Jacobs, Henry Lickers, and Mike Williams. Thanks also to the staff of the Biodiversity Convention Office for their support.

"What will you leave me, Grandfather?"

*"All of my territory with everything you find on it.
All kinds of animals, fish, trees, all the rivers,
that is the heritage I leave you.
Down through the generations
that is what you will need for survival."*

*"Don't ever forget what I am going to tell you.
During your lifetime do as I do—respect all the animals.
don't ever make them suffer before you kill them.
don't ever waste anything by killing more than you need, and
don't ever try to keep an animal in captivity because the
animals are necessary for the survival of future generations."*

*A dying Innu man to his
grandson, from Zu'as-tu fait de mon pays? by
Antane Kapesk*

Introduction

Aboriginal peoples today are looking to restore and regain control over their environment. In the process, they are breaking new ground by undertaking interesting and innovative initiatives aimed at protecting biodiversity in a holistic manner.

Traditional teachings and practices play an important role in decision-making, and serve as a foundation for efforts to rebuild native communities. Their ancient relationship with the land has given indigenous peoples a profound knowledge of



the living earth. In the indigenous world view, all parts of the universe are interconnected. Every living creature, whether bird, animal, tree or plant, lives according to the instructions it was given by its creator. The conservation of biodiversity is an integral part of indigenous teachings.

Although native peoples have made important intellectual and technical contributions to society in such areas as food, economy, science, medicine and politics, these have gone largely unrecognized. It is only recently that international and national bodies have begun to accept that these people possess unique and invaluable knowledge about the environment and resource management.

Many people see economic development and biodiversity as mutually exclusive. The strategies aboriginal communities are currently pursuing to combine the two suggest that this need not be the case. Their efforts to realize sustainable development and self-sufficiency can serve as an inspiration to the rest of the world, which is urgently looking for ways to restore the harmony of the living earth.

As illustrated in the following case studies, native peoples stress the importance of putting biodiversity into a broader context—one that requires a holistic approach involving work both inside and outside the community. As such, native biodiversity programs have many components—including initiatives to heal the community, create jobs, promote the health of the ecosystem, build awareness and form new alliances—all of which are necessary to maintaining biodiversity. The fact that this formidable task is undertaken with such zeal is proof of the commitment these communities have made to regaining control over their environment.

Purpose of the Study

Aboriginal communities undertaking environmental activities are struggling with many issues at the same time. Some of the key questions raised in this report are:

- how can traditional aboriginal values affect resource management decision-making?;
- in what ways can aboriginal knowledge and scientific knowledge contribute to enhancing and conserving biological diversity?;
- what steps are aboriginal communities taking to create employment, conserve biodiversity and promote sustainable development in their communities?;
- in what ways does the community participate in environmental activities?; and
- what kind of relationship do aboriginal communities have with universities, government, industry and environmental groups, and what role can each play in advancing these communities' interests?



This report focuses on environmental initiatives being undertaken in four Canadian aboriginal communities. The case studies are not exhaustive descriptions of each community's undertakings; but rather outlines of the strategies followed and their results. Because most of these initiatives are in their formative stages, it is not yet possible to evaluate their success. Restoring the environment and enhancing biodiversity takes time. The fruit of these labours may not become apparent for many decades.

These case studies are not meant to be a comprehensive representation of the changes taking place in Canada's native communities—some of which are overwhelmed by environmental problems, and are struggling for community and cultural survival. While these particular studies were carried out on reserves, it is hoped that future studies will also explore Metis and Inuit environmental initiatives.

Background

Increased recognition of native rights to land and resources has enabled aboriginal peoples in Canada to regain control of their natural environment over the last three decades. Previous to this, many colonial policies and practices undermined traditional ways of life. Traditional knowledge was, for the most part, disregarded and devalued by Western society.

Fortunately, this attitude has changed. Since the 1987 World Commission on the Environment and Development the global community has increasingly come to recognize the unique environmental knowledge possessed by indigenous peoples. Today, native peoples are becoming more and more involved in international environmental and sustainable development efforts, including the Earth Summit and Agenda 21. The United Nations Convention on Biological Diversity refers to the intellectual property rights of indigenous peoples, and contains explicit articles on the importance of respecting, maintaining and preserving traditional environmental knowledge.

As a party to this Convention, Canada has already developed a strategy for its implementation. *Canada's Biodiversity Strategy* contains a list of measures for implementing Convention articles pertaining to indigenous peoples. A key goal of the *Strategy* is to achieve biodiversity conservation by "demonstrating the role of indigenous knowledge and management in the conservation and sustainable use of biodiversity, and establishing opportunities for indigenous communities to share their knowledge of biodiversity and the management of biological resources with non-indigenous communities." (1995: 71)

In Canada, constitutional developments, environmental conflicts, court decisions, and land claim negotiations and settlements have opened the door for

aboriginal involvement in environmental activities and resource management. In 1982, aboriginal rights to resources were entrenched in the *Canadian Constitution Act*. Since then, the ratification of a number of Northern comprehensive claim settlements (including the Inuvialuit Final Agreement, the Nunavut Agreement-in-Principle and the Gwich'in Agreement) has legislated aboriginal access to and control over natural resources. As a result, some Northern communities have years of experience co-managing these resources. Their achievements serve as an inspiration to many communities in other parts of Canada. The Supreme Court rulings have also had profound implications on aboriginal rights to renewable resources. The Sparrow decision, for example, gives native peoples precedence over all other users in fishing for food, social and ceremonial purposes.

Impetus for action has also come from within native communities. Today these communities are taking important steps to rid themselves of problems—such as high unemployment, alcoholism, family violence and ill health—that were caused by years of colonial policies and practices. A vital step in this healing process is to regain their control over environmental stewardship. As Cree Chief George Desjarlais, of West Moberly Lake, says, "We have to show these government people that we have been environmentalists, land use managers [and] land use planners since the time Creator sent us here." (Sinclair 1994: 9)

Methodology for Case Studies

The communities examined in this report are: Hesquiaht, on Vancouver Island in British Columbia; Walpole Island, in Ontario; Akwesasne, in Quebec and Ontario; and Eel Ground, in New Brunswick. Although all four are involved in biodiversity conservation to at least some extent, different environmental conditions and cultures have shaped their approaches. For example, Eel Ground—a Micmac community with forest resources and fewer than 1000 residents—has followed a different road than the Mohawk community of Akwesasne, which has a population of over 8000 and a territory with a wide-range of natural resources.

These communities were chosen because they provide a broad sample of the innovative strategies being undertaken by native communities across Canada. Because there is little literature available on these projects, most of the information in this report was obtained through site visits and interviews with people who play an active part in the conception, planning and administration of these strategies. Community members reviewed drafts of the case studies and approved their content. Without the time and effort these people put forth, this report would not have been possible.



Hesquiaht



Hesquiaht is implementing a management plan aimed at both regaining control over its territory and realizing sustainable economic development. The plan is all-encompassing, sets long-term guidelines, and is unique in its use of Hesquiaht beliefs about the environment as a guiding principle. The many components of the plan include job creation, restoration of living resources and the ecosystem, capacity-building within the community, and involvement in regional processes. The Hesquiaht community itself sets the pace and direction of the strategy. This case is interesting not only because of its achievements, but also because of the carefully planned process it proposes to follow.

Background

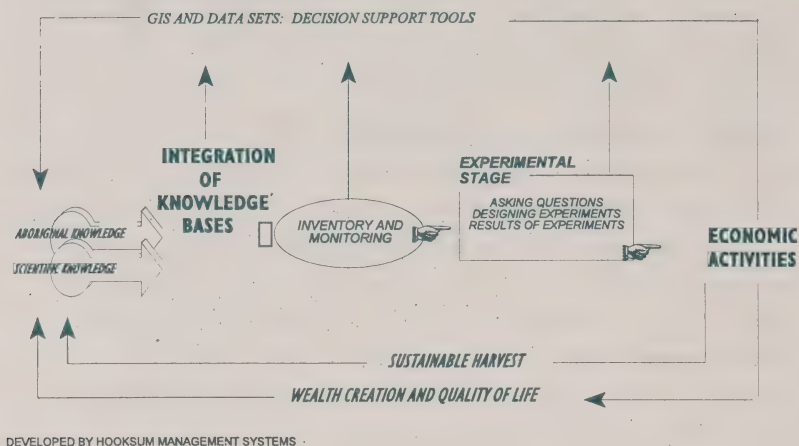
Hesquiaht is situated on the West coast of Vancouver Island, on the border of the Clayoquot Sound Region. Since the 1960s, logging in the area has been extensive. This is the case for 70 percent of the Hot Springs Cove watershed located at the south end of this traditional territory.

The territory's ecosystem has altered dramatically as a result of clear-cutting practices. Land and aquatic resources have suffered noticeably, and the people of the community have been vitally affected by the changes. Only within the past six years, however, has Hesquiaht been actively trying to improve the situation. (Chief Steve Charleson interview, 1995).

Hesquiaht's management plan is called Management for a Living Hesquiaht Harbour (MLHH). Starting with the restoration of the area's watersheds, it aims to create wealth, improve quality of life and protect biodiversity for the next 80 generations—the life span of the longest living species in the forest: the cedar.

Management for a Living Hesquiaht Harbour

Planning Process



Inventorying and Monitoring Resources

Taking inventory of and monitoring the territory's resources are central elements of Hesquiaht's management plan. After years of unmonitored resource extraction, the state of this seriously depleted environment remains to be determined. Gathering baseline data may be a time-consuming process, but is considered a prerequisite for the wise management of Hesquiaht's resources.

Some of the inventory work Hesquiaht has carried out to date includes stream inventories, annual assessments of the salmon escarpments, a survey of adult herring movements and spawn distribution, and crab and coho stock assessments. This and other high quality data on the condition of the streams and watersheds serves as a tool for monitoring and exerting control over the activities of companies working in the area. Most importantly it will enable the community to determine sustainable levels of economic activity. (Charleson, 1994).

Determining Sustainable Harvest

The primary goal in determining sustainable harvest levels at Hesquiaht is to ensure that, given the constraints of land capability and biological limitation,



sufficient resources are available to meet food, ceremonial, and economic needs. (Charleson, 1995) To accomplish this, consideration is given to the life cycle of each species, as well as to all other parts of the ecosystem with which it is linked. Establishing sustainable harvest levels for cedar, for instance, requires an examination of its own life cycle, as well as that of the other species—such as ferns, fungi and mushrooms—for which it provides habitat. Species biodiversity and the market value of these species are also taken into account. In addition to limits, a number of management prescriptions have been established for each species. These include working with other agencies to preserve habitat diversity, bringing the species under the control of the Hesquiaht First Nations, and identifying and protecting habitats that are critical to the species in question. (MLHH, 1995)

Integrating Scientific and Aboriginal Knowledge

Aboriginal knowledge leads the Hesquiaht planning process. Scientific knowledge serves as a complement, provides tools for putting it into practice, and helps to present things in a form that is easily understood by the outside world. As Chief Steve Charleson explains, "We used to say we did not need science, [that] science is limiting, forcing us to go in one direction. But now we find that with science we are listened to. We know what the health of our ecosystem is; we put it in scientific language to please others."

Scientific knowledge, for example, can translate an elder's oral description of the depletion of resources into formal facts and figures that carry more weight with the outside world. All data gathered on the territory's resources is entered into a Geographical Information System (GIS) that serves as a tool for territorial resource management. Integrating aboriginal and scientific knowledge is not always easy, however. Having the latter dominate a management plan causes discomfort and resistance among those who do not understand aboriginal ways. Commenting on resistance he has received from environmental groups, Sennen Charleson, the intermeasures agreement coordinator at Hesquiaht, says, "Environmentalists forget that aboriginal knowledge has been developing over thousands of years. How can they say that scientific knowledge must be a prerequisite to development of a watershed? They don't understand—they are insulting us." (University of Victoria presentation, 1995)

When seeking outside expertise, care is taken to find individuals who are open to different world views, and who are prepared to work according to Hesquiaht terms. The needs of both parties are established at the outset. The role of the expert is simply to provide any technical tools the Hesquiahts require. Once skills have been transferred, MLHH staff continue on their own. To date, Hesquiahts



have been trained to gather, analyze and monitor data using computers—skills that have increased their awareness of other issues along the way.

Hesquiaht and Provincial Processes

Esquiaht is located in an area that has been the focus of both national and international attention—a factor that has pushed the province to take a stance on the environment and aboriginal peoples. The fact that British Columbia is now at the forefront of aboriginal involvement in resource management has created some interesting dynamics for the implementation of the MLHH.

The active participation of First Nations people in resource management on Vancouver Island dates back to the Delgamuukw appeal of 1992. A year later, the Clayoquot Sound Land Use Decision stated that "Government recognizes the rights of the Nuu-Chah-Nulth peoples with respect to traditional use of resources and their concerns for improving forest practices, and for a more meaningful and timely role in decisions concerning resource utilization."

In 1994, as a result of these events, the five aboriginal peoples of the Nuu-Chah-Nulth Tribal Council and the province agreed to establish a Central Regional Board (CRB) comprised of five aboriginal representatives and five provincial representatives. The task of the CRB is to review and approve all applications relating to the development of land and resources in the Clayoquot Sound Region.

Participation in the Board has, for the first time, given aboriginal peoples a voice in the management of resources on their traditional territory. By being part of this central decision-making process, Hesquiaht ensures that environmental decisions are consistent with the goals and strategies of the MLHH. The power provided by the CRB also contributes to the implementation of the plan. (Steve Charleson interview, 1995) The Board has even adopted parts of the MLHH model—an achievement that fits with the Hesquiaht First Nation's vision to link aboriginal peoples, on their own terms, with the rest of Canadian society.

Biodiversity-Friendly Employment

The community of Hesquiaht creates employment opportunities without jeopardizing its principles of operation (see Table 1). It encourages all companies working on the territory to hire Hesquiahts and to involve them in activities. The community ensures that it is an active part of all territorial monitoring efforts being conducted by external governments and agencies. Because Hesquiaht is a region high in biodiversity, it is the focus of a great deal of research, including a government kelp monitoring program.



Table 1. Hesquiaht First Nation's principles of operation

1. Linkages with others
2. "We are owners of the land"
3. Integration of scientific and aboriginal knowledge
4. Comprehensive view of the ecosystem
5. "Show others we have the skills"

Hesquiaht has successfully negotiated with a logging company working on its territory to employ natives. These employees, in turn, inform the community about the industry's work. Since the two parties have started sitting at the same table, the company has come to realize the advantages of consulting with First Nations people. It is now considering employing Hesquiahts to identify culturally-modified trees located in the area to be logged¹, because natives are more capable of carrying out this task than the professional archaeologists who are currently required to do so under government regulations.

Environmental groups sometimes question aboriginal involvement with government and industry. (Council for Indigenous Care interview, 1996) However, aboriginal peoples recognize that sitting at the discussion table with these groups is necessary to establishing a harmonious relationship between humankind and the environment. Hesquiaht managers realize that many elements of the equation still need to be worked out before the MLHH objectives of regaining control over resources and achieving economic self-sufficiency can be realized. After all, there is no precedent to follow. But, as Chief Steve Charleson says, " It will take time. And we have the time". The fact that the number of welfare recipients on the reserve has been cut in half suggests that things are moving in the right direction.

¹ A culturally modified tree refers to any tree or portion of tree from which Aboriginal peoples have used bark or wood for traditional sustenance, medicinal, ceremonial or transportation purpose (IMA 1994).

Walpole Island



Walpole Island is well-known, both nationally and internationally, for its environmental protection work. It has one of the most complete environmental databases of any aboriginal peoples—or any community of comparable size—in Canada. Home to many rare plants, endangered species and a unique ecosystem that includes 17 000 acres of wetland, the Island's concern over biodiversity has always been important. One particularly notable aspect of its approach to biodiversity is the emphasis placed on environmental education and awareness—both inside and outside the community.

In Context

The people of Walpole Island have lived off and managed their lands for thousands of years. Little wonder that its biological diversity, ecological integrity and wildlife conservation efforts are the best of any of the 36 sites in Carolinian Canada. (Environmental Audit, 1994: 33) Today, people in the community continue to develop new approaches to managing their environment through alliances, environmental education and planning. A large number of environmental activities take place on Walpole Island at any given point in time—from organizing a purple loosestrife campaign, to programs involving the Cooperative Natural Area of Canada Protection and Enhancement Program and the Nature Conservancy of Canada.

Most ideas for environmental projects come from or are put forward to the community by the Nin.Da.Waab.Jig Heritage Centre. The Centre is a community-based research organization that was established in 1981 to meet the needs of the Band Council, rather than those of external agencies. (Hedley and Jacobs, 1991) At the time, a research priority for the band was to identify the effects of environmental degradation on wildlife and the community. The general mandate

of the Centre is to protect, preserve, interpret and promote the natural and cultural heritage of the Walpole Island aboriginal peoples.

An integral part of the Centre's work has been to seek innovative ways to involve the community in resource management. The community, therefore, guided the development of its own Sustainable Development Strategy and Implementation Plan. The task was not easy, because "it required a collective commitment to rediscovering and articulating traditional environmental ethics and knowledge and the selection of those aspects deemed most appropriate for a sustainable future. The community was therefore engaged in a process of reconstructing the past by re-examining the historical record and collecting oral histories from elders in the community." (Jacobs, 1992) This method guaranteed that the Plan was grounded in aboriginal environmental values.

Biodiversity Conservation and Community Education

Walpole Island's approach to biodiversity emphasizes environmental education. To be successful in this regard, work has been undertaken in many forms and at many levels. Because Walpole Island has controlled its own education system and curriculum since 1990, schools have been an important focus. Among the many activities they have participated in is a University of Michigan project called the Global River Environment Education Network (GREEN), in which students monitor water quality. "In this way, we make sure that the kids get involved—that they get hands-on experience. They do the sampling, see the contaminants, and then present the results to the community. This increases their awareness of environmental problems." (Mike Williams interview, 1995)

A special effort has also been made to employ youth in environmental research, including the gathering of traditional environmental knowledge. Students were recently involved in the creation of a *Green Directory*—a user-friendly manual that provides households with tips for reducing waste, increasing water, energy and transportation savings, as well as becoming an eco-wise consumer. The directory, which was distributed to every household on the reserve, has a simple philosophy: we can all do our part in protecting and healing Mother Earth, and can achieve great rewards if we all work together.

In addition to working with youth, Walpole Island has developed education programs to address specific community needs, such as informing its agriculture sector of the environmental effects of pesticides. With over 12 000 acres of cultivated land on the Island, this is valuable work. Efforts to build community awareness and support by keeping residents informed and welcoming their input

are ongoing. Newsletters are published regularly to let the community know about different environmental activities and progress being made.

Over all, the Centre has realized the importance of working with the community and educating it about the value of resource management. Dean Jacobs, Director of the Heritage Centre, offers the following observation: "What I'm most pleased about [with regard to] the work that we've done here is [that] we have a more informed community and they are asking really tough questions, and that's good. They are the driving force behind us to make us do more work and better research ." (*Native Beat*, January 1992)

Capacity-Building and Partners

Because many research institutes and universities are attracted to Walpole Island by its unique ecosystem, a large number of the community's environmental activities are carried out in collaboration with these institutions. One of the conditions placed on external experts who come to work on the Island is that they must transfer skills and offer training to local people. Thus, environmental projects, such as the establishment of research stations for monitoring water and air quality, sediment, wildlife, fish and human health, have enabled the community to develop strong technical, scientific and management skills. (Jacobs, 1992: 190) Walpole Island can now conduct its own comprehensive environmental audit, something very few aboriginal peoples have the human resources to do. The community is also producing practical manuals for other aboriginal peoples on various environmental issues, including a recent publication on waste management that is based on native values and practices.

Economic Development, Community and Biodiversity

Walpole Island possesses the largest wetland in the Great Lakes system and is known for its rich and valuable biological diversity. As such, there has been keen interest to protect this area and place it on the UN Ramsar Convention list, which was established in 1971 to ensure the conservation of important wetlands. While there was some support for this idea because of the potential value international recognition could bring it, it was opposed by a majority of community members.

A large number of people in Walpole Island depend on the wetlands for food and income. They worried that being on the Ramsar list would reduce their control over the territory and invite external interference. As Mike Williams, assistant director of the Heritage Centre, explains: "The community did not care for the Ramsar Convention, because along with recognition comes a management plan

[and] consultants telling them what to do. They saw the wetlands becoming a national park, an isolated area, that they could no longer use."

The community also turned down a marsh management plan developed by the Heritage Centre and university researchers because hunters and gatherers believed it would lessen their control over the wetland—an important source of income for many. Although they have formed their own Conservation Club, many fishermen and hunters see management as a means of losing control rather than as a tool that is essential to maintaining and enhancing the Island's diversity. (Jacobs interview, 1995) Community environmental education initiatives are an important part of building support for a resource management plan.

Increasing employment is a priority for many communities like Walpole Island. To help strengthen the local economy, the reserve recently supported the construction of a new mall, with the stipulation that it must not harm the environment. (Lee White interview, 1995) The Heritage Centre continues to propose development projects that combine economic and environmental concerns, such as the production of organic vegetables and wild flower seeds. These projects remain dormant, however, until they are taken on by the community.

A notable case in which Walpole Island has succeeded in incorporating native environmental values into an economically-profitable project is Tahgahoning Enterprises, a band-owned cooperative that cultivates grain corn, seed corn and soybeans on 4400 acres. This enterprise is Ontario's largest native farming operation and one of its largest cash crop farms. A wildlife sanctuary has been established in its cornfields, and care is taken to prevent run-off from reaching local marshes where it could affect fish habitat.

Biodiversity Conservation and Educating Environmental Stakeholders

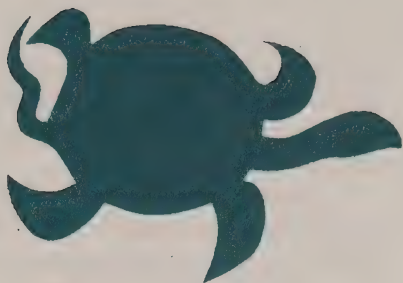
In addition to building awareness within the community, Walpole Island works to promote environmental education beyond its borders. Jacobs, for instance, participated in the Ontario Round Table on the Environment and Economy and the Native People's Circle on Environment and Development. Involvement in these processes is vital to building alliances and promoting aboriginal involvement in environmental decision-making on an eco-regional scale.

Decisions made at the eco-regional level have a considerable impact on Walpole Island's natural environment—a point emphasized by the community during the development of its Sustainable Development Strategy and Implementation Plan. Located within the Sarnia Chemical Valley, which is home to 28 industrial facilities, the threat to biodiversity from outside the Island

continues to be a very serious one. Research has already demonstrated that continuous exposure to pollutants from these sources has increased toxin levels in a variety of wildlife, including turtles, ducks and fish. (Heritage Centre, 1990) In keeping with the community mandate, the Heritage Centre has been pressuring local industries to limit pollution levels and reduce environmental damage. Now, Walpole Island is considered in the corporate decision-making process, and meets with industry representatives prior to the launch of any new development initiatives. (Jacobs interview, 1995)

Part of the reason for Walpole Island's increased bargaining power with industry is the network of alliances it has fostered and the negotiating experience it has gained over the years. Aboriginal peoples on the Island have learned that the media can be a powerful tool for swaying public opinion. Industries that refuse to negotiate with this small community risk conveying a poor impression of their practices to the rest of the world. (Mike Williams interview, 1995).

Akwesasne



Western technology and the quest for progress have seriously threatened the cultural and environmental foundation of the Mohawk community at Akwesasne. Efforts are being made to restore features of the natural environment to their former state by increasing species diversity and reducing the negative impacts of human activity. In this way, the community will be able to pursue traditional occupations and ways of life.

Background

Akwesasne is located on the St. Lawrence River, at the junction of Quebec, Ontario and New York State. The territory is governed by three Mohawk Councils: the traditional government, known as the Mohawk National Council of Chiefs; a Canadian body called the Mohawk Council of Akwesasne; and an American body called the St. Regis Mohawk Tribal Council. Each level of government deals with environmental issues within its jurisdiction. The Mohawk Council of Akwesasne has had an environmental department since 1976; the St. Regis Mohawk Tribal Council since 1986. The Akwesasne Environmental Task Force, composed of community members, Council chiefs and environmental technicians, acts as the co-ordinating body and link between the three levels of government. Largely a community-based organization, it also serves as a forum for community input into environmental affairs.

Most environmental damage in Akwesasne resulted from the construction of the St. Lawrence Seaway in 1959. Earth movers destroyed land and wetlands, and the resulting increase in industrialization in the area boosted the flow of pollutants into surrounding air, water and land. The people of Akwesasne found that they could no longer live off their natural resources, which had either become depleted or so contaminated that they were dangerous to human health. The resultant

disruption in their traditional diet caused many to suffer from nutritional problems. As Mohawk Lloyd Benedict explains, " Now we have to pay for our food. It is strange food so we look for the cheapest, which has no nutritional value." (Benedict interview, 1995)

Although the people of Akwesasne did not begin to take serious action to prevent the environmental destruction of their territory until the 1970s, the community has put forth an organized resistance to encroachment on its lands since the building of the Beauharnois Barge Canal in 1834. The fact that, even then, Mohawk representatives were not satisfied with British offers of monetary compensations is indicative of continuing differences in the value natives and non-natives place on the environment.

Biodiversity-Related Activities in Akwesasne

Akwesasne is involved in many environmental activities, most of which focus on research, monitoring and community awareness. Other activities include efforts to determine the health effects of contaminated water, air, and soil on community members in general and mothers in particular.

Biodiversity-related activities at Akwesasne are aimed at restoring the natural environment that existed prior to the devastation wrought by the Seaway construction and other development projects. Since a large part of the environmental damage is contamination, many activities consist of restoring the quality and quantity of existing species rather than increasing diversity. This point is illustrated by two projects that are currently being carried out at Akwesasne—one dealing with the cultivation of food fish, and the other with the replanting of black ash trees.

The Aquaculture Project

Fish is a traditional and important part of the Mohawk diet. Today, however, the consumption of fish from the contaminated St. Lawrence River poses serious threats to human health. Since 1978, the Mohawk Council of Akwesasne has recommended that women of childbearing age, pregnant women or children under the age of 15 not eat fish from this source—a dietary change that has caused rampant health problems of its own.

Akwesasne is now working to offer its people contaminant-free fish by collaborating with scientists to develop ways to protect the fish from the contaminated food chain. Stock are fed with pellets and cultivated in containers that are placed in the middle of the river during the summer months. Indoor cultivation facilities have recently been established with the long-term objective

being to raise domestic and eventually wild perch—a species of great value to the community. This effort, while still at its experimental stage, is well on its way to achieving the goal of conserving the river's genetic stock.

The Black Ash Project

Akwesasne has been involved in replanting black ash trees on its territory since the early 1990s. Once abundant in the area, the species is in decline due to agricultural expansion and the draining of areas for land development and irrigation. Basket makers who require black ash for their livelihood must go further and further afield in search of a tree. The primary objective of the replanting efforts headed by the task force and the Mohawk Council of Akwesasne is to allow these craftspeople to pursue their profession. Biodiversity enhancement is a positive by-product.

When the replanting project was initiated, managers found little information on how to grow black ash trees. The fact that the trees do not have a high market value also hampered their efforts to raise funds for research on the subject. The community has, nevertheless, been able to collect seeds, germinate them in seed beds and transplant the seedlings. In collecting the seeds, care is taken to ensure genetic diversity by gathering samples from all over the continent. Because it takes 40 years for a black ash to reach the age at which it is best for basket making, it will be difficult to assess the success of this program for some time. However, it remains an important part of Akwesasne's overall effort to rebuild its natural habitat.

The community is also carrying out species inventories on many of the islands within its territory. Research methods involve the use of both biological surveys and traditional knowledge of the territory and its history. In some cases, these efforts have led to rehabilitation through species propagation or replanting. So far, 10 000 trees have been replanted on Akwesasne territory.

Strategy

A guiding philosophy of biodiversity conservation at Akwesasne is that it requires community participation to succeed. The government's role is to make it possible for the community to live according to the teachings of Mother Earth. (Lickers interview, 1995) Environmental groups within Akwesasne create impetus by providing education, nurturing projects, conducting primary research, and encouraging community action. These groups help identify possible sources of funding, offer technical assistance, and facilitate linkages between university research centres and community members. Ecohawk, the non-governmental

organization heading the aquaculture project, is setting an example for others to follow.

Environmental education is focused on traditional Mohawk knowledge and practices and involves the teaching of ancient skills, such as fishing and beaver trapping. Students are taught a wide range of environmental skills—from how to raise and handle fish, to understanding the effects of water pollution. The basic concept is to learn by doing. Conservation managers use education to make people understand the importance of being good environmental stewards. "When someone does something wrong our response is not to put them in jail. We want to heal the person: we believe in rehabilitation." (Lickers interview, 1996)

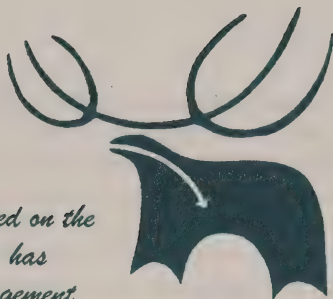
Partnerships and Biodiversity

The community of Akwesasne realizes that success in biodiversity conservation means working in partnership with industry, government and other stakeholders. Much of Akwesasne's work—including its participation in the Eastern Ontario Model Forest Program—is directed at creating a common ground for discussion with these parties.

Akwesasne's participation in the Model Forest Program has encouraged many external stakeholders to adopt a native view of forest management. (Lickers interview, 1996) Greater attention is being paid to the importance of long-term and non-economic values of forest species. (Barclay interview, 1996) Moreover, stakeholder awareness of and sensitivity to aboriginal values have increased. The Domtar pulp and paper company now knows about Akwesasne's interest in black ash and makes a special interest to inform the community about the presence of the species when it is discovered during harvesting.

As a result of the increased collaboration fostered by this Program, Akwesasne has been working on sustainable development projects with Domtar—including an initiative to rehabilitate islands that have been choked with dredged material. By depositing compostable wood waste on these islands, a super-rich soil conditioner is being introduced that is ideal for growing plants. For Akwesasne, the effort means environmental rehabilitation and a possible source of revenue; for Domtar it means a future source of wood fibre. Some people in Akwesasne are even looking at alternative fibre sources, such as grasses, that could generate employment and revenue on the reserve. This is just one example of how industry and Akwesasne Mohawks are working together to integrate biodiversity conservation and economic development.

Eel Ground



Eel Ground, a Micmac community located on the outskirts of Miramichi, New Brunswick, has implemented an integrated forestry management plan that is regarded as a model by both native and non-native communities in Canada. The most notable feature of Eel Ground's management plan is that it is community-based, and responds to community needs and demands. Specific goals of the plan include the maintenance and enhancement of wildlife and species diversity, the protection of traditional medicinal plants, the creation of opportunities for recreational and spiritual activities, and increased economic benefits and employment.

Background

Eel Ground began managing its 2631 hectares of productive forested land just six years ago. For the 150 years preceding this, native and non-native use of the forest was neither monitored nor controlled. This period of unchecked resource use left the land in poor state, with a low volume of marketable trees.

In 1990, Agfor Limited was hired by the band to produce a management plan for Eel Ground. It indicated that these lands would take a significant amount of time to return to harvestable condition if left in their present state. The decision to take action was supplemented by the fact that the band saw the forest as a potential source of employment. At the time, only 30 percent of the community was employed, and those that were involved in band administration and related services.

Two factors combined to make the introduction of a forest management plan at Eel Ground possible. First, funds were made available through the Canada-New Brunswick Cooperative Agreement on Forestry Renewal under a special provision for restoring Indian lands (program 4.1). Second, expertise was close at hand in the form of several community members who were not only educated in forestry, but also committed to improving the livelihood of their community.

Initially, there was a great deal of resistance to the plan, which many perceived as a form of external interference. At the same time, Eel Ground, like many native communities, had lost its vision for the future because of paternalistic government policies. To overcome this resistance—and in keeping with aboriginal ways—priority was placed on building community support and participation. Today, 95 percent of the community backs the plan, because it is understood that managing this depleted resource will bring great benefits to residents and their families.

Eel Ground's forest is managed to meet community needs and reflect community values. Concern for biodiversity is prevalent for three reasons: Eel Ground residents see the environment as a child to be cared for; a healthy environment is part of the community's vision for the future; and band members are concerned about the welfare of their children. As one community member says, "We don't have to use sophisticated words like biodiversity, we don't have to think about it, because we practice it."

Lack of experience managing a forest for timber production made it necessary for Eel Ground to rely heavily on its alliance with the Canadian Forest Service and to obtain training from forestry education programs. These have helped forest managers to understand the needs of the community and to synthesize these needs into a concise management plan.

The Management Plan

The first step in Eel Ground's management plan is to practice residual removal and pre-commercial and semi-commercial thinning. At present, 28 percent of the forested land at Eel Ground has undergone this procedure, which involves thinning dense stands to permit the more rapid growth of young trees. In the long run, this practice will improve tree quality.

Before any cutting is done, data is collected on species composition, age, size, soil condition, evidence of animal usage, and medicinal and cultural value. This information helps to determine which areas are to be left and which are to be marked for treatment, and ensures that species composition is preserved. In some situations, diversity is maintained by alternating the type of tree that is cut from one year to the next.

Leaving cut branches on the ground for biomass regeneration and limiting the impact of external intervention on the forest are two more ways Eel Ground demonstrates its concern for biodiversity. After two years of cutting, there is little evidence that woodcutters or machines have been in the stand—save for the healthy young trees that grow there.

Trees that are identified as having special significance to individual members of the community are left untouched. In Eel Ground's management plan, spiritual value outweighs economic value. Beaver dams, often considered destructive to forested areas, are welcomed at Eel Ground for protecting the area against fire and providing habitat for moose. Every element of the management plan reflects the community's holistic view of the forest.

In keeping with this approach, wildlife conservation is also an integral part of the plan. Based on estimates of forest and wildlife needs, one quarter of the land is to be left untouched. The remaining two thirds are parceled with untouched areas and bisected by wide corridors that have been left for large animals to travel on. Work is sometimes halted to allow wildlife to return. The success of Eel Grounds efforts is evident from the fact that there has been a noticeable increase in the deer and moose population in the area since the management plan was first implemented. These and other results should be closely followed, as there is still much to learn about how to combine the principles of wildlife and forest management. (Chambers, 1990)

Capacity-building

Building local capacity is a priority of the Eel Ground forestry management plan. Meetings and newsletters are the primary means used to educate the community and encourage input into the plan. Forest managers consider this informal education to be extremely important to achieving the objectives of the plan.

Woodcutter training was initially provided by outsiders because of the need for certification from the New Brunswick Forest Product Association. Since then, native input into training modules has increased, and several Eel Ground residents have become instructors themselves. Other native bands in the region are now seeking advice and assistance from the community, which has already begun to train woodcutters from other reserves.

As Steve Ginnish explains, "We need people trained and capable of looking after the forests, otherwise we won't be able to keep them for long." Eel Ground's leadership has also been instrumental in the recent establishment of the Micmac-Maliseet Forestry Association of New Brunswick—a forestry committee composed of native bands. The Association enables bands to work together to promote their view of sustainable land management at both the federal and provincial levels.

Economic Development and Job Creation

As in other aboriginal communities, economic development and job creation are urgent needs at Eel Ground. Increasing employment opportunities in forestry has, therefore, been high on the band's agenda. Since 1990, the number of full-time forestry-related positions at Eel Ground has jumped from 11 to 40—a significant step toward achieving self-sufficiency in a community of 705 people (390 of which live on-reserve). This proves that it is possible to create employment and practice sound forestry management at the same time.

Success has not come cheap, however. Eel Ground has relied heavily on external funding to implement its management plan, requiring a 100 percent subsidy to carry out such activities as pre-commercial thinning. Ginnish sees this as a temporary but unavoidable expense: "The federal government has a responsibility to restore the land that has been destroyed as a result of its policies. Then we can look after it ourselves." By Eel Ground estimates, it will take 14 more years for the forest to produce a sustainable yield.

In the meantime, Eel Ground has increased its forest revenues from \$16 000 to \$500 000 in just six years. Three-quarters of this money goes toward paying woodcutters; the remainder is invested in infrastructure. This has allowed Eel Ground to reduce its dependence on government from 95 to 50 percent. For every dollar the band has received from government, it has earned a dollar-and-a-half through contracts with industries, the sale of wood fibre and other external work.

In order to continue to increase its economic returns, Eel Ground is gradually getting involved in other aspects of wood processing. The community recently acquired a portable sawmill—which already provides full-time employment for two people—and constructed a dry kiln and planer facility. By providing value-added wood products on demand, Eel Ground is developing a market niche in the region and increasing the return on its investment.

Eel Ground's forestry management plan has broken new ground, and is setting a precedent that should inspire other native and non-native communities. The voice it has given to community members has resulted in a resurgence of interest in native values and ways of life.

Discussion

Attempting to restore and regain control over the environment is like solving a puzzle. Biodiversity is a key piece of the picture, but it is not the only one. The challenge is to make all of the pieces fit together for the long term. As shown in these case studies, the size and shape of the pieces vary from one community to another. Determining factors include biological, geographical and climatic features, proximity and diversity of surrounding industries, ownership patterns, former biodiversity, and social history.

Despite differences in strategies, the four communities discussed in this report share similar approaches born of shared values, culture and traditional knowledge. Aboriginal communities consider human beings to be part of the environment, and believe that they have a sacred relationship with Mother Earth. They live in harmony with nature and view creation as a continuous, ongoing process.

Aboriginal peoples also share a common goal of self-sufficiency through sustainable development. Environmental rehabilitation is needed to rebuild communities that have been devastated by years of marginalization, and to support aboriginal control over land. Settling land claims and obtaining self-determination are two other essential aspects of this equation.

In attempting to elucidate trends among aboriginal communities engaged in environmental restoration, we have analyzed and compared the strategies followed by each of these four communities. The first section identifies and discusses the reasons why a community launches biodiversity-related initiatives in the first place. The second presents and discusses key features of native biodiversity conservation programs. It is hoped that this discussion will provide insights to interested communities and illustrate ways in which governments can support aboriginal efforts in the area of biodiversity. Although many developments made over the last decade have increased the potential for aboriginal involvement in resource management, much remains to be done to live up to the expectations raised in the Biodiversity Convention.

Factors Determining Action for Biodiversity

While the following factors facilitate action and make the initiation and implementation of environmental projects more likely, none of them is compulsory. A community engages in environmental activities for a number of reasons, some of which are unique to its particular situation.

Factors Within the Community

The main internal variables that determine a community's capacity to engage in biodiversity activities are political stability, leadership and community support.

Political stability is important because long-term activities require commitment and focus. Political factions within a community tend to divert attention away from these activities, although it is possible for a project initiated with strong support from part of the community to gather more support once it is implemented. The odds of this happening depend on whether political divisions are based on idiosyncratic or ideological factors. Political dynamics within a native community may also influence the capacity to gather external support. The community's voice within the political structure, therefore, is an important variable.

The presence of committed leadership is a key factor in the preliminary stages of a biodiversity project. Leadership is needed to sow the seeds of the initiative, as well as to build community consensus. Leaders must be careful not to permanently dominate the process—any resemblance to a top-down approach to resource management is unlikely to succeed in aboriginal communities. This could cause conflict within the community, and would be at odds with the vision underlying the strategies discussed in this report.

Tensions often arise between members of a community and the leaders who initiate action on biodiversity conservation, because this action often involves introducing new methods and approaches to environmental problems. Communities become concerned that scientific data will rule indigenous knowledge. For this reason, it is important to lay the groundwork necessary to incorporate indigenous knowledge and community involvement in a project before it is launched.

Aboriginal peoples place enormous emphasis on the individual's role in conserving biodiversity. The true measure of the success of an initiative, therefore, is whether or not it succeeds in encouraging the community to pass on its environmental knowledge and practices to future generations. Initial work must, therefore, focus on explaining the relationship between the approach and the objective. Communities may then engage in a participatory process to set their own guidelines. Community participation is essential because it is the community that possesses the traditional ecological knowledge essential to informed decision-making.

Factors Outside the Community

A community's capacity to engage in biodiversity-related activities is also determined by external conditions. In a sense, these conditions set the boundaries within which aboriginal peoples must operate. This does not mean, however, that



communities cannot elicit change by creating opportunities where they did not previously exist. The key external factors affecting aboriginal involvement in resource management are finances, the profile of the community itself, and interpretation of fiduciary obligations and court cases in a province.

The financial issue is unavoidable. Although aboriginal peoples emphasize economic activity as well as biodiversity conservation, reaping the benefits of environmental rehabilitation projects takes time. In the meantime, most activities require external financing and policy coordination. Being dependent on external funding means having to comply with accountability criteria established by funding agencies. This may require a community to accept methodological approaches and inappropriate time frames and outputs simply to please these agencies.

In an attempt to build support and understanding for their own biodiversity-related activities, as well as to broaden their vision, many communities have become involved in other environmental programs. Akwesasne's work on the Eastern Ontario Model Forestry Program, for example, has enabled it to obtain external support for its projects, while at the same time bringing stakeholders closer to the Mohawk way of seeing things.

Many provincial programs, however, are short-term and subject to political fluctuations. Sometimes, interesting programs are established following a crisis, and terminated when the situation calms down. In the Temagami region, for instance, a 1989 blockade spurred the creation of the Wendaban Stewardship Authority (WSA). Composed of six native and six non-native representatives, the WSA was given authority to implement and regulate resource use in the area of jurisdiction. Although it proved that natives and non-natives could work together effectively, the WSA is now in limbo due to expired funding agreements. (Ross, 1995:37 and O'Sullivan interview, 1995) The ex-chair of the Authority, Jim Morrison, questions the extent to which government is committed to devolving authority. In future, he says, funding agreements should not be administered by the government, and lines of authority should be more clearly defined. (Morrison interview, 1995)

The profile aboriginal peoples hold with current provincial and federal electorates also influences government policies and aboriginal bargaining power. The current high profile held by indigenous peoples worldwide is of benefit to Canadian aboriginals because it results in international support for environmental and other projects. The UN Convention on Biological Diversity, for example, calls for indigenous participation in resource management decision-making and the sharing of benefits from intellectual property rights.

The legislative framework, interpretation of fiduciary obligations and court cases within a province also impact on a community's capacity to engage in resource management.

Key Features of Native Biodiversity Programs

Although the approach taken to environmental strategies differs from one community to another, there are a number of key features that are common to the four strategies examined in this report. Some of these are described in the following section.

The Need to Make Economic Activity and Biodiversity Compatible

Aboriginal communities take a practical approach to biodiversity. Because their culture bids them to live in harmony with nature and according to traditional teachings, any strategy they undertake must balance the needs of economic activity with those of biodiversity. In some cases, such as at Akwesasne, this involves restoring former features of the environment to allow the continuation of traditional activities. In other cases, such as at Eel Ground and Hesquiaht, special attention is paid to extracting profitable resources from the territory, while preserving biodiversity.

An interesting result of such strategies has been the relationship many communities have forged through joint projects and native employment initiatives with outside industries. Some companies have come to realize that aboriginal peoples are effective negotiators, and possess unique knowledge on sustainable development. There may also be areas of common interest, as in Akwesasne, where natives are working with the pulp and paper industry to determine alternative sources of fibre. Communities are interested in working with industry because of opportunities for employment and small business development. These alliances create opportunities and benefits for both sides.

In general, communities working to restore and regain control over their territory are creating biodiversity-friendly employment. Many communities are creating jobs through environmental monitoring activities, such as fish indexing and air-monitoring. The information being collected not only helps aboriginal communities with their own planning, but also opens opportunities for increased participation in environmental decision-making outside their territory.

Working in Partnership

Native biodiversity strategies emphasize the need to work in partnership and create alliances with different stakeholders. Native communities realize that decisions made on a broader scale affect them greatly, and that work must be done to reduce external threats to their territories. By building awareness outside their communities, aboriginal peoples reduce the gap between mainstream and native approaches.

Native peoples are also interested in working in partnership because they want to play a more important role in the management of Canada's resources at large. The knowledge they possess is invaluable, and can contribute significantly to environmental initiatives in a world that is desperately searching for ways to achieve sustainable development. Recent co-management arrangements have helped to advance native interests, while at the same time exposing non-indigenous peoples to native ways. On a number of occasions, these ways have been adopted.

Native peoples are also creating links with various interest groups, although relations with environmentalists continue to be stressed by fundamental misunderstandings between the two. Environmentalists find it "difficult to accept that indigenous people living in isolated environments would possess dynamic, sophisticated systems of resource extraction and management grounded in custom which contain valuable soft technology, to which they can apply or develop appropriate hard technology." (Chapeskie, 1991:3) In general, differences between aboriginal peoples and environmentalists stem from their ideas about the relationship between humankind and the environment. The former consider human beings as part of the environment, while the latter see them as a threat to biodiversity, and therefore advocate 'pristine' environments.

Building Community Capacity and Awareness

It is considered essential to the success of a native biodiversity strategy that it be community-based. Community involvement in an environmental project can be an important part of healing the wounds sustained from years of being deprived of traditional ways of life and practices. "Those of us who work on environmental issues know that empowering aboriginal peoples is happening as our peoples are healing themselves from their inner pain. As they get stronger, so do their families, their communities, nation and Mother Earth." (Sinclair, 1995: 14) In a similar way, engaging in environmental activities leads to a resurgence of traditional ecological knowledge. In Eel Ground, for instance, the community had largely stopped using its forests before its forestry management plan was established. Since then, people have turned toward Micmac teachings and increased their traditional uses of this resource.

Community involvement in biodiversity is not automatic, however. Different activities—such as education programs in schools, newsletters, public meetings and mentoring—may be needed to encourage community awareness and consensus building. Such activities are often small in scale, but make a significant difference when added together. Walpole Island, for instance, held an essay contest in its schools to select a student to go to New York to accept a UN Award being presented to the community for its work in sustainable development. The impact

of this activity on biodiversity conservation is difficult to measure, but it did help to raise the profile of this work in the eyes of the Island's youth.

Building the capacity of a community so that it is equipped to take on biodiversity-related activities is another essential component of a successful strategy. Depending on the community's state of readiness, this may require slowing down the implementation process until needed skills are in place.

Controlling the Research Process

Maintaining control over the research process—and undertaking research that meets the needs of the community—are aboriginal priorities. Research will help aboriginal communities develop ways of cultivating perch, integrating traditional uses of the forest with timber production, and determining resource extraction levels that conserve biodiversity.

The challenge in this regard is to integrate scientific and indigenous knowledge, while allowing the latter to guide the process. Much learning is required on both sides, and experience has shown that finding common ground is not easy. Indigenous peoples must assert the primacy of their contribution, and scientists must open their minds to other ways of viewing the world. The formula for successful collaborations between universities and native communities has been communities that clearly state their objectives and universities that come with an open agenda to respond to these objectives. (George Haas interview, 1995)

In this, as in all matters, native communities are patient. Their responsibilities extend beyond the present to ensuring a continuous cycle of resources, and a habitable and healthy environment for future generations.

Conclusion

Aboriginal peoples are developing innovative strategies for preserving the environment and creating meaningful jobs and outcomes for their communities. Central to these strategies is the fact that they are community-driven—they reflect the community's vision, and their goals and objectives are established by the communities at heart. Integral to indigenous teachings is the belief that Mother Earth must be looked after for the children and grandchildren of future generations. Meeting this responsibility means marrying biodiversity with sustainability.

Aboriginal communities are working in partnership with others to implement these strategies. External players—such as universities, governments, environmental groups and industries—provide tools that are necessary to implementing the native vision.

Working in partnership is also important because most threats to biodiversity come from outside the native community. To minimize these threats, aboriginal peoples must play an active role in environmental decision-making at a national level. By working in partnership, they can build awareness and support for their values and interests. Their unique environmental knowledge can contribute to society's quest for a sustainable future.

Remaining in control of their biodiversity conservation strategies is a priority for aboriginal communities. The different stakeholders with which these communities deal have their own policy agendas and objectives. The challenge is to bring these divergent interests into focus. The search for common ground often results in some form of co-management arrangement. In order to ensure that aboriginal communities remain in control, they must be clear on their objectives and the role external players will play in realizing them. This guarantees that native interests and values will not be pushed aside in the implementation process.

This report has shown that there are many potentially viable ways to preserve and enhance biodiversity that meet the needs of both aboriginal communities and the rest of Canadian society. In order to support initiatives that are currently underway—and to encourage other communities to engage in similar processes—governments, universities and industries must open their doors to joint efforts. Stakeholders must be receptive to aboriginal ways of thinking and acting, and be ready to work in mutual collaboration. This requires a thorough and accelerated change in current ways of thinking. Most importantly, native communities must coordinate efforts aimed at biodiversity conservation to ensure that attention remains focused on sustainable development and native values.

Bibliography

- Alberta Society of Professional Biologists. *Native people and renewable resource management*. The Symposium of the Alberta Society of Professional Biologists. Alberta, 1986.
- Betts, Mathew. "An analysis of the potential for community forestry in New Brunswick." MA thesis, Waterloo University, 1995.
- Charleson, Sennen. *Management for a Living Hesquiaht Harbour Research Design*. Hesquiaht, 1994.
- Chambers, Alan (ed). *Proceedings wildlife Forestry Symposium: a workshop on resource integration for wildlife and forest managers*, Prince George. 1990.
- Chapeskie, Andrew. "Earth rights and Indigenous rights. The environmental protection movement and the defense of Indigenous rights". May 1991.
- Elias, Peter Douglas. *Development of Aboriginal People's Communities*. Canada: Captus Press, 1991.
- Gadgil, Madhav, Fikret Berkes and Carl Folke. "Indigenous Knowledge for biodiversity conservation." *Ambio*, Vol. 22, No. 2-3 (May 1993): 151-156.
- Hedley, Max and Dean Jacobs. "Cooperative Intervention in a reserve context." Paper presented at the Centre for Welfare studies, Sir Wilfrid Laurier University, 1991.
- Heritage Centre. "A future of Sustainable Development: Walpole Island Aboriginal peoples." Discussion paper, April 1990.
- Hyndman, David. "Conserving biodiversity through self-determination: promoting the interdependence of cultural and biological diversity." *Human Organization*, Vol. 53, No.3, 1994.
- Jacobs, Dean. "Walpole Island: sustainable development." In *Nation to Nation. Aboriginal sovereignty and the future of Canada*. Edited by Diane Engelstad and John Bird. Canada: Citizens for Public Justice, 1992.
- Lickers, Henry et al. *Building respect - native people and environmental assessment*. MCA and IREE, 1995.
- Notzke, Claudia. *Aboriginal peoples and Natural Resources in Canada*. Canada: Captus University Publications, 1994.
- Sinclair, Lorraine. "Voices for Mother Earth Gathering." Proceedings from the Indigenous component of TRN boreal forests of the World 11 Conference, Edmonton, May 1995.

Addresses for more information on case studies

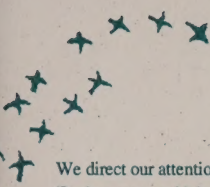
Hesquiaht Band Council
P.O. Box 2000
Tofino BC V0R 2Z0
Tel-Fax: (604) 724-8570

Walpole Island Heritage Centre
Walpole Island Aboriginal peoples
R.R. #3
Wallaceburg ON N8A 479
Tel: (519) 627-1475
Fax: (519) 627-1530

Mohawk Council of Akwesasne
Environmental Division
P.O. Box 579
Cornwall ON K6H 5T3
Tel: (613) 575-2377
Fax: (613) 575-2181

Eel Ground Community Development
Centre Inc.
138 MicMac Street
P.O Box 6, Site 2, R.R # 1
Miramichi NB E1V 3L8
Tel: (506) 627-4604
Fax: (506) 627-4605





Thanksgiving Address²

We direct our attention to the Life Forces on Mother Earth;
To the waters, which quenches our thirst and provides for the well being and the strength of plant life;
to the animals, who provide us with food, clothing, shelter and beauty;
to the trees of all shapes and sizes, who provide us with shelter and fruits of many varieties;
to the medicine plants, who are carrying on the Creator's instructions to cure disease and sickness.
We give our thanksgiving to all of these Life Forces who have continued to follow the Creator's instructions.
For this we are grateful and we thank you.

We direct our attention to the Four Winds;
We listen and hear their voices and we give greetings and thanksgiving that you are still following
the instructions given to you by the Creator,
sometimes bringing rain and renewing the waters upon Mother Earth and carrying seeds to the
earth for new growth in the spring.
For this we are grateful and we thank you.

We direct our attention to the work of our Elder Brother the Day Sun.
As the Day Sun is seen in Earth's sky from Dawn to Dusk we know that it is following the
instructions of the Creator by providing heat, light, energy and a source of life cycles of all living
creatures of earth.
For these things we are grateful and we are thankful.

We direct our attention to our Grandmother the Moon.
In our world our Grandmother Moon lights the night time sky and coordinates the life cycles of all
living things so that life will continue on this earth.
For following the instructions of the Creator we are grateful and extend our most thoughtful thanks.

We now direct our attention to the night time sky which is full of stars and other celestial bodies who assist
our Grandmother the Moon and the Day Sun in carrying out the Creator's instructions.
We are thankful for the ways in which the celestial bodies aid us in finding our way about the earth when
we travel to other villages or even great distances.
We are grateful that as ancient parts of creating they are still following the instructions of the Creator and for
this we are grateful and thankful.

We acknowledge all bird life and other animal life, from the smallest insect to the largest animal.
We believe that all of life has a purpose which creation and we are thankful that they continue to follow
the instructions of the Creator and for this we are thankful.

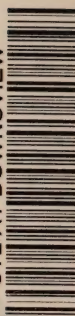
We now turn our thoughts to the Creator and we choose our finest words and thoughts to offer greetings
and thanksgiving to the Creator.
We are grateful that the Creator has prepared all things on Mother Earth and within the Universe
to have a purpose and meaning. We are grateful that we as the Human Beings are part of that
Creation. We are thankful that each element of Creation continues to follow the instruction of the
Creator for all time and for all of Creation.
For this we are ever grateful and are of the mind when we give thanks to you, our Creator.

² A translation from the Kahniakehaka (Mohawk language).

Back cover graphic courtesy of:
The Canadian Biodiversity Institute
Artist: Aleta Karstad



UTL AT DOWNSVIEW



D RANGE BAY SHLF POS ITEM C
39 14 04 14 13 037 6

Natasha Blanchet-Cohen, researcher in Indigenous
Environment Studies completing graduate work
at Carleton University

1996